



# Grandiose narcissism, depression and suicide ideation in Chinese and German students

Julia Brailovskaia<sup>1</sup> · Tobias Teismann<sup>1</sup> · Xiao Chi Zhang<sup>1</sup> · Jürgen Margraf<sup>1</sup>

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## Abstract

In Western cultural context, grandiose (overt) narcissism has been shown to be either unrelated or negatively related to negative mental health (depression, suicide ideation). Grandiose narcissism may be differently related to depression and suicide ideation variables in Eastern cultural contexts. The current study therefore aims to investigate associations between grandiose narcissism, depression, and suicide ideation in a sample of metropolitan Chinese students as well as in a sample of German students. A total of  $N = 935$  Chinese students (73.3% female;  $M_{\text{age}} = 22.62$ ,  $SD_{\text{age}} = .89$ ) and of  $N = 389$  German students (75.6% female;  $M_{\text{age}} = 23.13$ ,  $SD_{\text{age}} = 2.94$ ) completed paper-and-pencil and/or online measures of grandiose narcissism, depression, and suicide ideation. Grandiose narcissism was positively associated with depression and suicide ideation in Chinese students. Depression fully mediated the association between grandiose narcissism and suicide ideation – controlling for gender, age, and survey method. In contrast, in the German sample, no significant associations could be found. Grandiose narcissism obviously has different consequences in China than in Germany.

**Keywords** Grandiose narcissism · Depression · Suicide ideation · China · Germany

## Introduction

Increase of trait narcissism has been reported for Western countries (Twenge et al. 2008). Even though Chinese samples have been shown to be less individualistic and more collectivistic compared with European Americans (Oyserman et al. 2002), recent studies focusing on Chinese samples also demonstrated an increasing trend of narcissism (Cai et al. 2012) and individualism (Hamamura and Xu 2015) – especially in

young adults (under 30 years) living in metropolitan China (Chen 2009; Kwan et al. 2009). Nonetheless, cross-cultural psychological research continues to show that collectivistic processes are more prevalent among Chinese relative to Westerners (e.g., Han and Northoff 2008) and that American students display greater narcissism scores than Chinese students (Meisel et al. 2016).

Previous research (e.g., Krizan and Herlache 2018; Pincus and Lukowitsky 2010; Wink 1991) emphasized the distinction between two different subtypes/forms of narcissism: grandiose (overt) and vulnerable (covert). Both share a common narcissistic core characterized by entitlement, self-importance, low need for intimacy, low empathy, and self-centeredness (e.g., Brailovskaia and Bierhoff 2018; Campbell 2005; Hepper et al. 2014; Krizan and Herlache 2018; Miller and Campbell 2008; Rohmann et al. 2019). However, while grandiose narcissism is defined by exhibitionism, hubris, success-orientation, and extraversion, vulnerable narcissism is characterized by defensiveness, insecurity, and resentment (Brailovskaia and Margraf 2016; Dickinson and Pincus 2003; Hanke et al. 2019; Krizan and Herlache 2018; Rogoza et al. 2018; Rohmann et al. 2012; Rose 2002). Individuals with an enhanced level of grandiose narcissism often present themselves as charming interaction partners and initiate many superficial social interactions. In contrast, vulnerable narcissists tend to social anxiety and

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The datasets during and/or analysed during the current study available from the corresponding author on reasonable request.

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✉ Julia Brailovskaia  
Julia.Brailovskaia@rub.de

Tobias Teismann  
Tobias.Teismann@rub.de

Xiao Chi Zhang  
Xiaochi.Zhang@rub.de

Jürgen Margraf  
Juergen.Margraf@rub.de

<sup>1</sup> Mental Health Research and Treatment Center, Department of Psychology, Ruhr-Universität Bochum, Massenbergr. 9-13, 44787 Bochum, Germany

social avoidance (Brailovskaia and Bierhoff 2016, 2018). Corresponding to its typical characteristic, grandiose narcissism is often considered as the adaptive form of narcissism, while vulnerable narcissism is termed as the maladaptive/pathological form of narcissism that is positively linked to depression and anxiety symptoms (e.g., Brailovskaia and Bierhoff 2016; Miller et al. 2014; Pincus et al. 2009).

Most studies that previously described an increase of narcissism (e.g., Cai et al. 2012; Twenge et al. 2008; Twenge and Foster 2008, 2010), investigated the grandiose subtype. In the vast majority of (cross-cultural) research (e.g., Brailovskaia and Bierhoff 2016: Germany and Russia; Žemojtel-Piotrowska et al. 2018: Japan, Poland, and the United Kingdom) this form of narcissism is measured using the Narcissistic Personality Inventory (NPI; Raskin and Terry 1988), a self-report dimensional measure of narcissism. The NPI was originally developed with reference to the DSM-III criteria of narcissistic personality disorder (American Psychological Association 1980) including a grandiose sense of self-importance, a preoccupation with fantasies of unlimited success, power, brilliance, entitlement, the expectation of special favors as well as interpersonal exploitativeness. In accordance with this description, results of “experimental and correlational research describe individuals with high NPI scores as being manipulative, self-enhancing, prone to aggression, and exhibiting a dominant interpersonal style” (Cain et al. 2008, p. 643).

Nevertheless, research also demonstrates that the grandiose narcissism is associated with positive characteristics: As such, grandiose narcissism has been shown to be positively associated with positive mental health variables in Western countries (e.g., life satisfaction, subjective happiness, social support; Brailovskaia et al. 2017; Brailovskaia and Margraf 2016), whereas no or negative associations between this form of narcissism and negative mental health (e.g., depression, anxiety, stress) have been shown: For example, Brailovskaia et al. (2017) found both negative and non-significant associations between grandiose narcissism and depression in a series of studies investigating narcissism in German student samples. In like manner, some studies found negative associations between grandiose narcissism – as assessed with the NPI – and suicide ideation/behavior (Freudenstein et al. 2012; Svindseth et al. 2008), whereas others found no association between grandiose narcissism and suicide ideation/behavior (Pincus et al. 2009; Schoenleber et al. 2011). As such, one may speculate that Western societies offer sufficient possibilities to live out grandiose narcissistic tendencies and to receive positive feedback (Twenge and Campbell 2009; Twenge et al. 2008) – resulting in positive mental health outcomes.

However, it might be that grandiose narcissism is differently related to mental health variables in a non-Western cultural context. As such, in an Eastern cultural context that strongly

emphasizes interpersonal harmony and humbleness (Chang et al. 2004; Markus and Kitayama 1991; Triandis 1989), the need for personal recognition, attention and admiration that is especially high in grandiose narcissists (Rohmann et al. 2019) may receive little confirmation, which in turn may increase the risk for depression and suicide ideation. Prevalence of depression among Chinese students is high (Lei et al. 2016) and suicide ideation/behavior – though less commonly reported than in Western countries (Nock et al. 2014) – is an important public health issue in China (Lee et al. 2007). It is long known, that rates of suicidal ideation/behavior show significant cultural variations (Colucci and Lester 2013). Yet, to the best of our knowledge, little is known about differential relations between grandiose narcissism, depression and suicide ideation in Western and Eastern societies.

On this background, the current study aims at examining culturally specific factors associated with depression and suicide ideation. Therefore, relationships between grandiose narcissism, depression, and suicide ideation in a sample of metropolitan Chinese students and in a sample of German students were investigated. We hypothesized that (1.) grandiose narcissism is positively associated with depression and suicide ideation in China, whereas it is not associated with depression and suicide ideation in Germany, and that (2.) depression mediates the impact of grandiose narcissism on suicide ideation in Chinese students, whereas there is no mediation in German students.

## Method

### Participants

The present study belongs to the ongoing BOOM (Bochum Optimism and Mental Health) research program, which investigates risk and protective factors of mental health (Margraf and Schneider 2017). Between October and December 2016, data of 935 Chinese students from a large university in Shanghai (73.3% female; age:  $M = 22.62$ ,  $SD = .89$ , range: 20–28) were collected by a self-report survey (paper-and-pencil: 74.1%; online: 25.9%; t-tests revealed no significant differences of the investigated variables between both collection methods). Simultaneously, data of 389 German students from a large university in Bochum (75.6% female; age:  $M = 23.13$ ,  $SD = 2.94$ , range: 18–31) were collected by an online self-report survey. Both surveys included the same questionnaires in the national language of the sample (Chinese or German), which have been earlier validated in these languages (e.g., Brailovskaia et al. 2017; Kwan et al. 2009; Schönfeld et al. 2016; Siegmann et al. 2018; Wang et al. 2016). In both countries, participants were properly instructed and gave their informed consent to participate. Participation was voluntary and not compensated. The study was approved by the responsible

Ethics Committee. All national regulations and laws regarding human subjects research were followed.

## Measures

*Narcissistic Personality Inventory 13* (NPI-13; Gentile et al. 2013; Chinese version: Zhou et al. 2009; German version: Brailovskaia et al. 2017). Grandiose narcissism was measured with the brief version of the well-established NPI that consists of 13 items rated in a forced-choice format: A = *narcissistic* (= 1; e.g., “I like to look at myself in the mirror”) vs. B = *non-narcissistic* (= 0; e.g., “I am not particularly interested in looking at myself in the mirror”). Despite its shortness, the NPI-13 preserves the conceptual breadth of the full-length version of the NPI that contains 40 items (Raskin and Terry 1988). Brailovskaia et al. (2017) demonstrated a high correspondence of results between this short NPI version and the NPI-40, as well as a high stability of the NPI-13 over the time course of one year. Earlier reported internal scale reliability: Cronbach’s  $\alpha = .67-.76$  (Brailovskaia et al. 2017), current reliability: China:  $\alpha = .65$  (mean interitem correlation:  $r_{mi} = .13$ ); Germany:  $\alpha = .60$  ( $r_{mi} = .11$ ).

*Depression-Anxiety-Stress Scales 21 (DASS-21): Depression Scale* (DASS-D; Lovibond and Lovibond 1995; Chinese version: Wang et al. 2016; German version: Nilges and Essau 2015). Depression over the past week was assessed using the seven items of the DASS-21 depression subscale (e.g., “I couldn’t seem to experience any positive feeling at all”) – which is a cross-culturally well-established and validated instrument – rated on a 4-point Likert scale (0 = *did not apply to me at all*; 3 = *applied to me very much or most of the time*). Earlier reported scale reliability:  $\alpha = .91$  (Lovibond and Lovibond 1995), current reliability: China:  $\alpha = .88$  ( $r_{mi} = .46$ ), Germany:  $\alpha = .90$  ( $r_{mi} = .53$ ).

*Suicidal Behaviors Questionnaire – Revised: Suicide Ideation Subscale* (SBQ-R; Osman et al. 2001; German version: Glaesmer et al. 2018). Suicide ideation over the last twelve months was assessed using Item 3 of the SBQ-R (i.e., “How often have you thought about killing yourself in the past year?”) answered on a 5-point Likert scale (1 = *never*; 5 = *very often (five or more times)*). The SBQ-R item has been translated into Chinese by means of a translation-back-translation procedure according to the relevant guidelines for the translation of psychometric instruments (Hambleton 2001) and has been used in prior cross-cultural research (Siegmann et al. 2018).

## Statistical Analyses

Statistical analyses were conducted with the software program R (package lavaan; Rosseel 2012), the Statistical Package for the Social Sciences (SPSS) 24 and the macro Process version 2.16.1 ([www.processmacro.org/index.html](http://www.processmacro.org/index.html); Hayes 2012).

Considering previous concerns about the measurement invariance (MI) of the NPI-13 (see Žemojtėl-Piotrowska et al. 2018), first, the MI for this instrument was investigated (estimation method: weighted least squares mean and variance, WLSMV). Then, associations between the investigated variables were assessed by zero-order bivariate correlations. In both samples, a mediation model (Process: model 4) was calculated with the basic relationship between grandiose narcissism (predictor, X) and suicide ideation (outcome, Y) (path  $c$ , total effect). The path of grandiose narcissism to depression (mediator, M) was denoted by  $a$ ; the path of depression to suicide ideation was denoted by  $b$ . The combined effect of path  $a$  and path  $b$  represented the indirect effect. Path  $c'$  denoted the direct effect of grandiose narcissism to suicide ideation after the inclusion of depression. The mediation effect was assessed by the bootstrapping procedure (10,000 samples) that provides accelerated confidence intervals (95% CI), controlling for age, gender, and survey method.  $P_M$  (the ration of indirect effect to total effect) served as mediation effect measure.

## Results

As presented in Table 1, the test of MI for the NPI-13 across both samples revealed full configural invariance.

Table 2 presents the descriptive statistics and results of the correlation analyses of both samples. Suicide ideation over the past twelve months was found in 12% ( $n = 112$ ) of the Chinese sample and in 24.4% ( $n = 95$ ) of the German sample. While in the Chinese sample, grandiose narcissism was positively correlated with depression and suicide ideation, no significant correlations were found in the German sample. In both samples, depression and suicide ideation were positively interrelated.

As presented in Fig. 1a, the bootstrapped mediation analysis demonstrated that depression fully mediated the relationship between grandiose narcissism and suicide ideation in the Chinese sample ( $c: p = .0126$ ;  $c': p = .2980$ ). The indirect effect ( $ab$ ) became significant,  $b = .013$ , SE = .004, 95% CI [.007;.022];  $P_M: b = .605$ , SE = 5.612, 95% CI [.300;2.085]. In contrast, no significant mediation of depression in the relationship between grandiose narcissism and suicide ideation was found in the German sample (see Fig. 1b) ( $c: p = .3739$ ;  $c': p = .7151$ ;  $ab: b = -.012$ , SE = .012, 95% CI [-.035;.010];  $P_M: b = .649$ , SE = 27.485, 95% CI [-.771;27.772]).

## Discussion

The current study aimed to investigate associations between grandiose narcissism that is often considered as the adaptive

**Table 1** Test of measurement invariance for the NPI-13

NPI with three subscales	Model fit indices					Model comparison test			
	$\chi^2$	<i>df</i>	$\chi^2$ ( <i>df</i> )	<i>CFI</i>	<i>RMSEA</i>	Comparison	scaled $\Delta\chi^2$	$\Delta df$	<i>p</i>
German sample	123,712	62	123,712 (62)	.946	.051				
Chinese sample	213,458	62	213,458 (62)	.938	.051				
Model 1. configural invariance	337,171	124	337,171 (124)	.940	.051				
Model 2. metric invariance	467,603	134	467,603 (134)	.907	.061	2 vs. 1	39,34	10	<.001

NPI Narcissistic Personality Inventory; WLSMV Weighted Least Squares Mean and Variance; CFI Comparative Fit Index; RMSEA Root Mean Square of Approximation

form of narcissism (Miller et al. 2014), depression, and suicide ideation in metropolitan Chinese students and in German students. The test of MI revealed only full configural invariance for the NPI-13 as a whole scale that assessed grandiose narcissism in the present study. Configural invariance ensures that the investigated construct “exists across cultures and that the form of the scale is equal across these cultures” (Bieda et al. 2017; p. 3). While this form of invariance allows the comparison of result pattern between samples, further comparisons, for example of means, cannot be conducted (see e.g., Bieda et al. 2017; Hirschfeld and Von Brachel 2014; Little 1997; Meredith 1993; Tucker et al. 2006; Vandenberg and Lance 2000). Thus, considering the aim of the present study to investigate whether similar result pattern may occur in both included samples, configural invariance was appropriate.

Our findings revealed divergent result patterns in both samples: In the Chinese sample, grandiose narcissism was (1.) positively associated with depression and suicide ideation and (2.) depression fully mediated the association between grandiose narcissism and suicide ideation. In the German sample, grandiose narcissism was neither significantly related neither to depression nor to suicide ideation (1., 2.).

The result pattern of the Chinese sample stands in marked contrast to the result pattern of the German sample as well as of previous investigations on the association between grandiose narcissism and suicide ideation/behavior in Western cultural context: Studies using the NPI either found no association or a negative association between grandiose narcissism and suicide ideation/behavior (Freudenstein et al. 2012;

Pincus et al. 2009; Schoenleber et al. 2011; Svindseth et al. 2008). However, in Chinese students a positive association was found: It may well be that grandiose narcissism is rewarded less in an Eastern cultural context, narcissists may therefore receive less positive feedback which may negatively impact their self-esteem and exposes them to the risk of developing depression and suicide ideation. It may also be that Chinese individuals evaluate their narcissistic tendencies as inadequate and inappropriate themselves (i.e., even in the absence of negative interpersonal feedback). A more fine-grained study is necessary to understand the exact mechanisms underlying the association between grandiose narcissism, depression, and suicide ideation.

Irrespective of the exact mechanisms, the current study showed that narcissism is more likely to go along with depression and suicide ideation in an Eastern cultural context, such as China, where living-out of narcissistic tendencies potentially contradicts the societal standards, than in a Western society such as Germany. Current findings gain importance when considering the prior reported increase of narcissistic tendencies in China (e.g., Cai et al. 2012). However, as no measure was used to assess the cultural orientation of individualism and collectivism in the current study, present results are not directly attributable to these major cultural dimensions. In order to develop a more precise understanding of potential cultural differences, it is indispensable to use a corresponding measure in future studies. Against this background, the findings described here should be regraded as preliminary. In general, it might also be that cultural differences are less

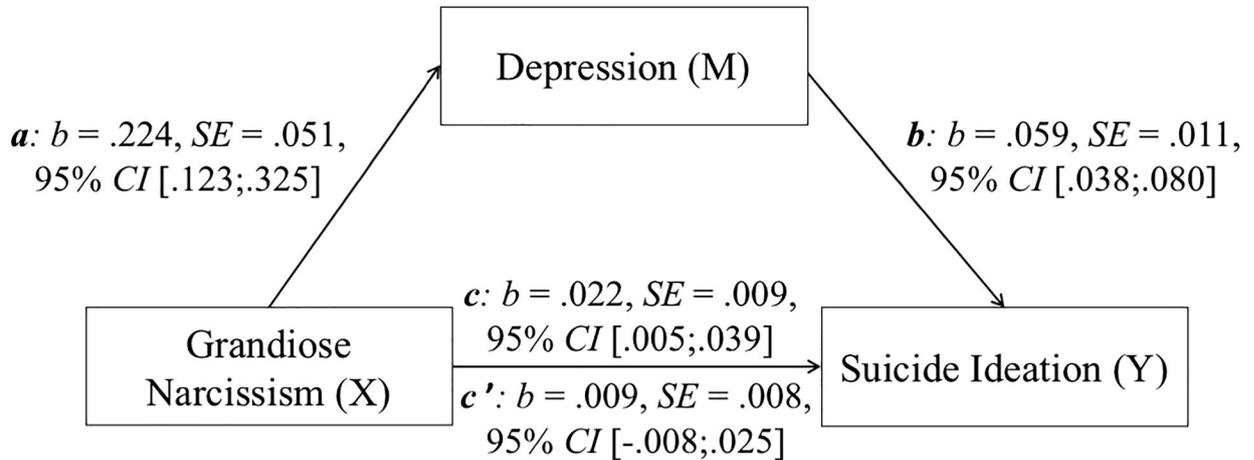
**Table 2** Descriptive statistics and correlations of grandiose narcissism, depression and suicide ideation

	Chinese sample ( <i>N</i> = 935)				German sample ( <i>N</i> = 389)			
	<i>M</i> ( <i>SD</i> )	<i>Min–Max</i>	(2)	(3)	<i>M</i> ( <i>SD</i> )	<i>Min–Max</i>	(2)	(3)
(1) Grandiose Narcissism	3.59 (2.45)	0–12	.192**	.107**	3.86 (2.38)	0–13	–.057	–.048
(2) Depression	1.90 (3.05)	0–21		.355**	5.29 (4.88)	0–21		.523**
(3) Suicide Ideation	1.17 (.53)	1–5			1.48 (.99)	1–5		

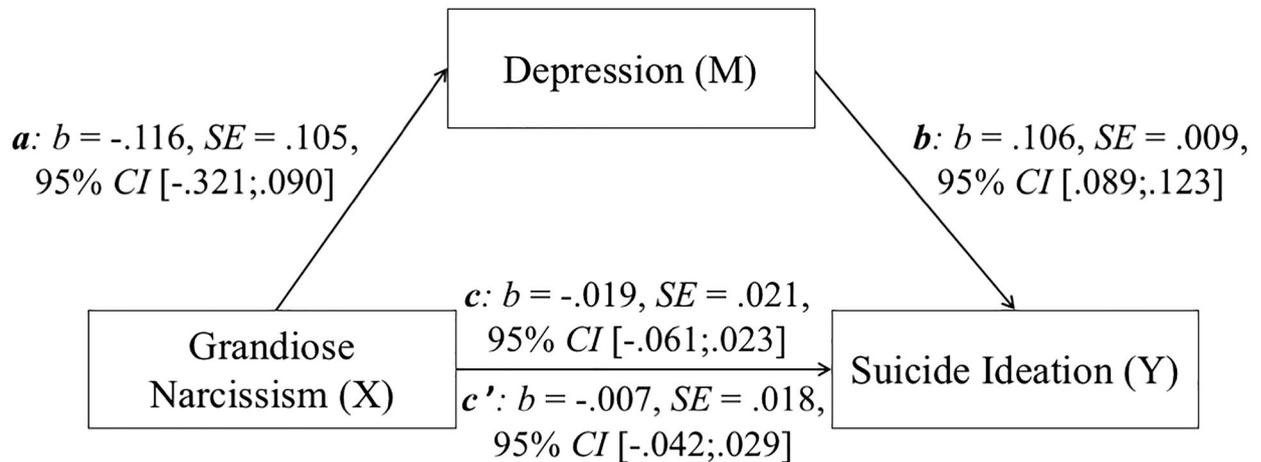
*M* Mean; *SD* Standard Deviation; *Min* Minimum; *Max* Maximum.

\*\**p* < .01

1a)



1b)



**Fig. 1** **a** Mediation model including grandiose narcissism (X), depression (M), and suicide ideation (Y) in China. **b** Mediation model including grandiose narcissism (X), depression (M), and suicide ideation (Y) in

Germany. *Note.* *c* = total effect, *c'* = direct effect; *b* = standardized regression coefficient, *SE* = standard error, *CI* = confidence interval

categorically than gradual: As such, narcissistic personality disorder – in contrast to grandiose narcissism – has been found to be positively associated with suicide ideation and suicide attempts in American studies (Ansell et al. 2015; Heisel et al. 2007). As such, culturally divergent limits of tolerance for narcissism and their impact on those affected should be subject to further studies.

In general, it has to be emphasized that there were large differences in the rate of suicide ideation between the German and Chinese sample. This finding is in line with a previous

study showing that suicide ideation and suicidal behaviors exhibit a low prevalence in metropolitan China (Lee et al. 2007). It may be argued that people in urban China have good mental health. However, there might also be a systematic downward bias toward reporting suicide ideation and suicidal behaviors in China (Lee et al. 2007). Future studies should clarify whether the increase in narcissism in metropolitan China is associated with an increase in depression and suicide ideation. Additionally, it should be investigated whether our results might be replicated in a sample from rural area of China.

There are several limitations to the present study. First, reliance on self-report measures renders the results susceptible to socially desirable responses. Second, the cross-sectional study design precludes the determination of causality. To make causal statements the cross-sectional research should be expanded by longitudinal prospective studies that consider the longitudinal course of the described associations of the investigated variables (see Kraemer et al. 1997). Third, generalization of the results towards other age or societal groups than university students is not possible, since the study focused only on this highly-educated population. Fourth, suicide ideation was only assessed with the respective item of the SBQ-R instead of a more comprehensive method. Yet, there is strong evidence for the predictive ability and relevance of single items assessing suicide ideation (Green et al. 2015).

Furthermore, in the current study, only the grandiose form of narcissism was included in the investigation. Thus, future studies are suggested to investigate whether same result pattern may be found for the vulnerable narcissism which previously has been described as the pathological form of narcissism and was linked to variables of negative mental health (Miller and Campbell 2008).

Moreover, the NPI – although the most widely used measure to assess trait narcissism – has been criticized for an array of content and psychometric issues (Cain et al. 2008). In the current study, both samples revealed a low reliability of the NPI. Note that corresponding to Ackerman et al. (2011) the NPI-40 (Raskin and Terry 1988) consists of three subscales (i.e., leadership/authority, LA; grandiose exhibitionism, GE; entitlement/exploitativeness, EE) which may be considered separately when investigating grandiose narcissism. The brief NPI-13 preserves this conceptual breadth of the NPI-40 (Brailovskaia et al. 2017). In the present study, however, due to the low reliability of the single subscales of the NPI-13 in both samples (reliability of NPI-13 subscales: German sample: LA:  $\alpha = .59$ , GE:  $\alpha = .54$ , EE:  $\alpha = .45$ ; Chinese sample: LA:  $\alpha = .57$ , GE:  $\alpha = .58$ , EE:  $\alpha = .43$ ), only the total NPI score was considered (see Kanyongo et al. 2007; Kline 1999; Mohajan 2017). If future studies may find higher reliability of the NPI-subcales, they could investigate the association between grandiose narcissism, depression, and suicide ideation on the single facet level of the NPI.

Note that the reliability level depends inter alia on the number of items of the investigated scale (Cortina 1993), therefore, the low number of items included in the single subscales of the NPI-13 (LA and EE: four items; GG: five items) might at least partly explain their low reliability. A further reason for the low reliability of the NPI-subcales might be the forced-choice response format of this instrument which was often criticized by previous research (e.g., Ackerman et al. 2016; Miller et al. 2018; Wetzels et al. 2016). To increase reliability, this response format could be replaced by a Likert-type scale format (Grosz

et al. 2019), which however, might also change the factor structure of this instrument (see Ackerman et al. 2016).

Additionally, it should be emphasized that in the present study tests of MI for the NPI-13 across both samples revealed only full configural invariance (see Bieda et al. 2017). Therefore, data were only suitable for comparison of result pattern between both samples. They should be treated with caution as they do not allow direct comparisons of for example the mean level of narcissism between both samples. Thus, it might be helpful to use other measures of narcissism in future studies to enable direct cross-cultural comparisons of grandiose narcissism and to better understand the associations of this construct.

To conclude, the present study demonstrated that grandiose narcissism is positively associated with depression and suicide ideation in Chinese students, but not in German students. Experience of depression represents an underlying mechanism of the relationship between narcissism and suicide ideation.

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## Compliance with Ethical Standards

**Conflict of Interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

## References

- Ackerman, R. A., Witt, E. A., Donnellan, M. B., Trzesniewski, K. H., Robins, R. W., & Kashy, D. A. (2011). What does the narcissistic personality inventory really measure? *Assess, 18*, 67–87. <https://doi.org/10.1177/1073191110382845>.
- Ackerman, R. A., Donnellan, M. B., Roberts, B. W., & Fraley, R. C. (2016). The effect of response format on the psychometric properties of the narcissistic personality inventory: Consequences for item meaning and factor structure. *Assessment, 23*(2), 203–220. <https://doi.org/10.1177/1073191114568113>.
- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: American Psychiatric Association.
- Ansell, E. B., Wright, A. G. C., Markowitz, J. C., Sanislow, C. A., Hopwood, C. J., Zanarini, M. C., Yen, S., Pinto, A., McGlashan, T. H., & Grilo, C. M. (2015). Personality disorder risk factors for suicide attempt over 10 years follow-up. *Personality Disorders, 6*(2), 161–167. <https://doi.org/10.1037/per0000089>.
- Bieda, A., Hirschfeld, G., Schönfeld, P., Brailovskaia, J., Zhang, X. C., & Margraf, J. (2017). Universal happiness? Cross-cultural measurement invariance of scales assessing positive mental health. *Psychological Assessment, 29*(4), 408–421. <https://doi.org/10.1037/pas0000353>.
- Brailovskaia, J., & Bierhoff, H.-W. (2016). Cross-cultural narcissism on Facebook: Relationship between self-presentation, social interaction and the open and covert narcissism on a social networking site in Germany and Russia. *Computers in Human Behavior, 55*, 251–257. <https://doi.org/10.1016/j.chb.2015.09.018>.

- Brailovskaia, J., & Bierhoff, H.-W. (2018). The narcissistic millennial generation: A study of personality traits and online behavior on Facebook. *Journal of Adult Development*, 1–13. <https://doi.org/10.1007/s10804-018-9321-1>.
- Brailovskaia, J., & Margraf, J. (2016). Comparing Facebook users and Facebook non-users: Relationship between personality traits and mental health variables—an exploratory study. *PLoS One*, 11(12), e0166999. <https://doi.org/10.1371/journal.pone.0166999>.
- Brailovskaia, J., Bierhoff, H.-W., & Margraf, J. (2017). How to identify narcissism with 13 items? Validation of the German narcissistic personality inventory-13 (G-NPI-13). *Assessment*, 26, 630–644. <https://doi.org/10.1177/1073191117740625>.
- Cai, H., Kwan, V. S., & Sedikides, C. (2012). A sociocultural approach to narcissism: The case of modern China. *European Journal of Personality*, 26(5), 529–535. <https://doi.org/10.1002/per.852>.
- Cain, N. M., Pincus, A. L., & Ansell, E. B. (2008). Narcissism at the crossroads: Phenotypic descriptions of pathological narcissism across clinical theory, social/personality psychology, and psychiatric diagnosis. *Clinical Psychology Review*, 28, 638–656. <https://doi.org/10.1016/j.cpr.2007.09.006>.
- Campbell, W. K. (2005). *When you love a man who loves himself*. Naperville, IL: Sourcebooks.
- Chang, L., Arkin, R. M., Leong, F. T., Chan, D. K., & Leung, K. (2004). Subjective overachievement in American and Chinese college students. *Journal of Cross-Cultural Psychology*, 35(2), 152–173. <https://doi.org/10.1177/0022022103260461>.
- Chen, S. X. (2009). Explaining individuating behavior across cultures: The contributions of values and social axioms. In K. Leung & M. H. Bond (Eds.), *Psychological aspects of social axioms: Understanding global belief systems* (pp. 293–315). New York: Springer SBM.
- Colucci, E., & Lester, D. A. (2013). *Suicide and Culture*. Göttingen: Hogrefe.
- Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. *Journal of Applied Psychology*, 78, 98–104.
- Dickinson, K. A., & Pincus, A. L. (2003). Interpersonal analysis of grandiose and vulnerable narcissism. *Journal of Personality Disorders*, 17(3), 188–207. <https://doi.org/10.1521/pedi.17.3.188.22146>.
- Freudenstein, O., Valevski, A., Apter, A., Zohar, A., Shoval, G., Nahshoni, E., Weizman, A., & Zalsman, G. (2012). Perfectionism, narcissism, and depression in suicidal and nonsuicidal adolescent inpatients. *Comprehensive Psychiatry*, 53, 746–752. <https://doi.org/10.1016/j.comppsy.2011.08.011>.
- Gentile, B., Miller, J. D., Hoffman, B. J., Reidy, D. E., Zeichner, A., & Campbell, W. K. (2013). A test of two brief measures of grandiose narcissism: The narcissistic personality inventory-13 and the narcissistic personality inventory-16. *Psychological Assessment*, 25(4), 1120–1136. <https://doi.org/10.1037/a0033192>.
- Glaesmer, H., Kapusta, N., Teismann, T., Wagner, B., Hallensleben, N., Spangenberg, L., & Forkmann, T. (2018). Psychometrische Eigenschaften der deutschen Version des Suicide Behaviors Questionnaire Revised (SBQ-R). *Psychotherapie, Psychosomatik, Medizinische Psychologie*, 68, 346–353. <https://doi.org/10.1055/s-0043-118335>.
- Green, K. L., Brown, G. K., Jager-Hyman, S., Cha, J., Steer, R. A., & Beck, A. T. (2015). The predictive validity of the Beck depression inventory suicide item. *Journal of Clinical Psychiatry*, 76, 1683–1686. <https://doi.org/10.4088/JCP.14m09391>.
- Grosz, M. P., Emons, W. H. M., Wetzels, E., Leckelt, M., Chopik, W. J., Rose, N., & Back, M. D. (2019). A comparison of unidimensionality and measurement precision of the Narcissistic Personality Inventory and the Narcissistic Admiration and Rivalry Questionnaire. *Assessment*, 26(2), 281–293.
- Hamamura, T., & Xu, Y. (2015). Changes in Chinese culture as examined through changes in personal pronoun usage. *Journal of Cross-Cultural Psychology*, 46(7), 930–941. <https://doi.org/10.1177/0022022115592968>.
- Hambleton, R. K. (2001). The next generation of the ITC test translation and adaptation guidelines. *European Journal of Psychological Assessment*, 17, 164–172. <https://doi.org/10.1027//1015-5759.17.3.164>.
- Han, S., & Northoff, G. (2008). Culture-sensitive neural substrates of human cognition: A transcultural approach. *Nature Reviews Neuroscience*, 9, 646–654.
- Hanke, S., Rohmann, E., & Foerster, J. (2019). Regulatory focus and regulatory mode—keys to narcissists’(lack of) life satisfaction? *Personality and Individual Differences*, 138, 109–116. <https://doi.org/10.1016/j.paid.2018.09.039>.
- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling [White paper]. Retrieved from <http://www.afhayes.com/public/process2012.pdf>. Accessed 1 Jul 2019.
- Heisel, M. J., Links, P. S., Conn, D., van Reekum, R., & Flett, G. L. (2007). Narcissistic personality and vulnerability to late-life suicidality. *American Journal of Geriatric Psychiatry*, 15(9), 734–741. <https://doi.org/10.1097/01.JGP.0000260853.63533.7d>.
- Hepper, E. G., Hart, C. M., Meek, R., Cisek, S., & Sedikides, C. (2014). Narcissism and empathy in young offenders and non-offenders. *European Journal of Personality*, 28(2), 201–210. <https://doi.org/10.1002/per.1939>.
- Hirschfeld, G., & Von Brachel, R. (2014). Multiple-group confirmatory factor analysis in R-A tutorial in measurement invariance with continuous and ordinal indicators. *Practical Assessment, Research & Evaluation*, 19(7), 1–12. Retrieved from <http://pareonline.net/pdf/v19n7.pdf>. Accessed 1 Jul 2019.
- Kanyongo, G. Y., Brook, G. P., Kyei-Blankson, L., & Gocmen, G. (2007). Reliability and statistical power: How measurement fallibility affects power and required sample sizes for several parametric and nonparametric statistics. *Journal of Modern Applied Statistical Methods*, 6(1), 81–90. <https://doi.org/10.22237/jmasm/1177992480>.
- Kline, P. (1999). *The handbook of psychological testing* (2nd ed.). London: Routledge.
- Kraemer, H. C., Kazdin, A. E., Offord, D. R., Kessler, R. C., Jensen, P. S., & Kupfer, D. J. (1997). Coming to terms with the terms of risk. *Archives of General Psychiatry*, 54(4), 337–343.
- Krizan, Z., & Herlache, A. D. (2018). The narcissism spectrum model: A synthetic view of narcissistic personality. *Personality and Social Psychology Review*, 22(1), 3–31. <https://doi.org/10.1177/1088868316685018>.
- Kwan, V. S., Kuang, L. L., & Hui, N. H. (2009). Identifying the sources of self-esteem: The mixed medley of benevolence, merit, and bias. *Self and Identity*, 8, 176–195. <https://doi.org/10.1080/15298860802504874>.
- Lee, S., Fung, S. C., Tsang, A., Liu, Z. R., Huang, Y. Q., He, Y. L., Zhang, M. Y., Shen, Y. C., Nock, M. K., & Kessler, R. C. (2007). Lifetime prevalence of suicide ideation, plan and attempt in metropolitan China. *Acta Psychiatrica Scandinavica*, 116, 429–437. <https://doi.org/10.1111/j.1600-0447.2007.01064.x>.
- Lei, X. Y., Xiao, L. M., Liu, Y. N., & Li, Y. M. (2016). Prevalence of depression among Chinese students: A meta-analysis. *PLoS One*, 11(4), e0153454. <https://doi.org/10.2224/sbp.2016.44.9.1541>, 1541, 1553.
- Little, T. D. (1997). Mean and covariance structures (MACS) analyses of cross-cultural data: Practical and theoretical issues. *Multivariate Behavioral Research*, 32(1), 53–76.
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with the Beck depression and anxiety inventories. *Behaviour Research and Therapy*, 33(3), 335–343.

- Margraf, J., & Schneider, S. (2017). Bochum Optimism and Mental Health (BOOM) Research Program: Background, methods and aims. *Manuscript in preparation*.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224–253.
- Meisel, M. K., Ning, H., Campbell, W. K., & Goodie, A. S. (2016). Narcissism, overconfidence and risk taking in U.S. and Chinese student sample. *Journal of Cross-Cultural Psychology*, 47, 385–400. <https://doi.org/10.1177/0022022115621968>.
- Meredith, W. (1993). Measurement invariance, factor analysis and factorial invariance. *Psychometrika*, 58(4), 525–543.
- Miller, J. D., & Campbell, W. K. (2008). Comparing clinical and social-personality conceptualizations of narcissism. *Journal of Personality*, 76(3), 449–476. <https://doi.org/10.1111/j.1467-6494.2008.00492.x>.
- Miller, J. D., McCain, J., Lynam, D. R., Few, L. R., Gentile, B., MacKillop, J., & Campbell, W. K. (2014). A comparison of the criterion validity of popular measures of narcissism and narcissistic personality disorder via the use of expert ratings. *Psychological Assessment*, 26(3), 958–969. <https://doi.org/10.1037/a0036613>.
- Miller, J. D., Gentile, B., Carter, N. T., Crowe, M., Hoffman, B. J., & Campbell, W. K. (2018). A comparison of the Nomological networks associated with forced-choice and Likert formats of the narcissistic personality inventory. *Journal of Personality Assessment*, 100(3), 259–267. <https://doi.org/10.1080/00223891.2017.1310731>.
- Mohajan, H. K. (2017). Two criteria for good measurements in research: Validity and reliability. *Annals of Spiru Haret University Economic Series*, 17(4), 59–82.
- Nilges, P., & Essau, C. (2015). Die Depressions-Angst-Stress-Skalen. *Der Schmerz*, 29(6), 649–657. <https://doi.org/10.1007/s00482-015-0019-z>.
- Nock, M. K., Borges, G., & Ono, Y. (2014). *Suicide. Global perspectives from the WHO world mental health survey*. Cambridge: Cambridge University Press.
- Osman, A., Bagge, C. L., Gutierrez, P. M., Konick, L. C., Kopper, B. A., & Barrios, F. X. (2001). The suicidal behaviors questionnaire-revised (SBQ-R). *Assessment*, 8, 443–454. <https://doi.org/10.1177/107319110100800409>.
- Oyserman, D., Coon, H. M., & Kemmelmeier, N. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin*, 128, 3–72. <https://doi.org/10.1037/0033-2909.128.1>.
- Pincus, A. L., & Lukowitsky, M. R. (2010). Pathological narcissism and narcissistic personality disorder. *Annual Review of Clinical Psychology*, 6, 421–446. <https://doi.org/10.1146/annurev.clinpsy.121208.131215>.
- Pincus, A. L., Ansell, E. B., Pimentel, C. A., Cain, N. M., Wright, A. G. C., & Levy, K. N. (2009). Initial construction and validation of the pathological narcissism inventory. *Psychological Assessment*, 21(3), 365–379. <https://doi.org/10.1037/a0016530>.
- Raskin, R., & Terry, H. (1988). A principal-components analysis of the narcissistic personality inventory and further evidence of its construct validity. *Journal of Personality and Social Psychology*, 54, 890–902.
- Rogoza, R., Żemojtel-Piotrowska, M., Kwiatkowska, M. M., & Kwiatkowska, K. (2018). The bright, the dark, and the blue face of narcissism: The Spectrum of narcissism in its relations to the metatraits of personality, self-esteem, and the nomological network of shyness, loneliness, and empathy. *Frontiers in Psychology*, 9, 343. <https://doi.org/10.3389/fpsyg.2018.00343>.
- Rohmann, E., Neumann, E., Herner, M. J., & Bierhoff, H.-W. (2012). Grandiose and vulnerable narcissism. *European Psychologist*, 17, 279–290. <https://doi.org/10.1027/1016-9040/a000100>.
- Rohmann, E., Hanke, S., & Bierhoff, H.-W. (2019). Grandiose and vulnerable narcissism in relation to life satisfaction, self-esteem, and self-construal. *Journal of Individual Differences*, 1–10. <https://doi.org/10.1027/1614-0001/a000292>.
- Rose, P. (2002). The happy and unhappy faces of narcissism. *Personality and Individual Differences*, 33(3), 379–391.
- Rosseel, Y. (2012). Lavaan: An R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1–36.
- Schoenleber, M., Sadeh, N., & Verona, E. (2011). Parallel syndromes: Two dimensions of narcissism and the facets of psychopathic personality in criminally involved individuals. *Personality Disorders*, 2(2), 113–127. <https://doi.org/10.1037/a0021870>.
- Schönfeld, P., Brailovskaia, J., Bieda, A., Zhang, X. C., & Margraf, J. (2016). The effects of daily stress on positive and negative mental health: Mediation through self-efficacy. *International Journal of Clinical and Health Psychology*, 16(1), 1–10. <https://doi.org/10.1016/j.ijchp.2015.08.005>.
- Siegmann, P., Teismann, T., Fritsch, N., Forkmann, T., Glaesmer, H., Zhang, X. C., Brailovskaia, J., & Margraf, J. (2018). Resilience to suicide ideation: A cross-cultural test of the buffering hypothesis. *Clinical Psychology & Psychotherapy*, 25(1), 1–9. <https://doi.org/10.1002/cpp.2118>.
- Svindseth, M. F., Nottestad, J. A., Wallin, J., Roaldset, J. O., & Dahl, A. A. (2008). Narcissism in patients admitted to psychiatric acute wards: Its relation to violence, suicidality and other psychopathology. *BMC Psychiatry*, 8, 13. <https://doi.org/10.1186/1471-244X-8-13>.
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, 96, 506–520.
- Tucker, K. L., Ozer, D. J., Lyubomirsky, S., & Boehm, J. K. (2006). Testing for measurement invariance in the satisfaction with life scale: A comparison of Russians and north Americans. *Social Indicators Research*, 78(2), 341–360. <https://doi.org/10.1007/s11205-005-1037-5>.
- Twenge, J. M., & Campbell, W. K. (2009). *The narcissism epidemic: Living in the age of entitlement*. New York: Free Press.
- Twenge, J. M., & Foster, J. D. (2008). Mapping the scale of the narcissism epidemic: Increases in narcissism 2002–2007 within ethnic groups. *Journal of Research in Personality*, 42(6), 1619–1622. <https://doi.org/10.1016/j.jrp.2008.06.014>.
- Twenge, J. M., & Foster, J. D. (2010). Birth cohort increases in narcissistic personality traits among American college students, 1982–2009. *Social Psychological and Personality Science*, 1(1), 99–106. <https://doi.org/10.1177/1948550609355719>.
- Twenge, J. M., Konrath, S., Foster, J. D., Campbell, W. K., & Bushman, B. J. (2008). Egos inflating over time: A cross-temporal meta-analysis of the Narcissistic Personality Inventory. *Journal of Personality*, 76(4), 875–901. <https://doi.org/10.1111/j.1467-6494.2008.00509>.
- Vandenberg, R. J., & Lance, C. E. (2000). A review and synthesis of the measurement invariance literature: Suggestions, practices, and recommendations for organizational research. *Organizational Research Methods*, 3(1), 4–70.
- Wang, K., Shi, H.-S., Geng, F.-L., Zou, L.-Q., Tan, S.-P., Wang, Y., Neumann, D. L., Shum, D. H. K., & Chan, R. C. K. (2016). Cross-cultural validation of the depression anxiety stress scale–21 in China. *Psychological Assessment*, 28(5), e88–e100. <https://doi.org/10.1037/pas0000207>.
- Wetzell, E., Roberts, B. W., Fraley, R. C., & Brown, A. (2016). Equivalence of narcissistic personality inventory constructs and correlates across scoring approaches and response formats. *Journal of Research in Personality*, 61, 87–98. <https://doi.org/10.1016/j.jrp.2015.12.002>.

Wink, P. (1991). Two faces of narcissism. *Journal of Personality and Social Psychology*, *61*(4), 590–597.

Żemojtel-Piotrowska, M., Piotrowski, J., Rogoza, R., Baran, T., Hitokoto, H., & Maltby, J. (2018). Cross-cultural invariance of NPI-13: Entitlement as culturally specific, leadership and grandiosity as culturally universal. *International Journal of Psychology*. <https://doi.org/10.1002/ijop.12487>.

Zhou, H., Zhang, B., Chen, L. W., & Ye, M. Y. (2009). Development and validation of narcissistic personality inventory for Chinese. *Chinese Journal of Clinical Psychology*, *17*, 5–7.

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